

Butterflies of New Delhi (Papilionoidea)

BY

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Few would premeditatedly select New Delhi for representative collecting of Indian butterflies, but it is the very paucity of species that makes possible, for the part time collector confined to Delhi, a collecting coverage very difficult in richer areas. From the point of view of representative coverage over the period of a few years, New Delhi is an ideal locality in several respects. Large series of a limited number of species may be assiduously amassed. The condition of much of New Delhi being a gardenized island of greenery in a very extensive semidesert region permits an easy and discrete study of sublocalities. Extremes of climate against relative abundance and migratory patterns afford highly informative correlations. The pattern and even incidence of the monsoon and other climatic events in Delhi are notoriously undependable and variable, and while this clearly relates to abundance of most species it must also affect the direction and scale of migrations. Certain species are so common at times in New Delhi that individual and seasonal variation can be satisfactorily covered in a relatively brief period. My time has permitted only a brief collecting coverage, and it is for this reason that my remarks below are intended by way of supplement to the study by Julian P Donahue that appeared in Vol. 63, no. 2 and Vol. 64, no. 1 of this *Journal*.

LOCALITIES

Contained by Rouse Avenue, Turkman Road, Circular Road, and Mathura Road, is what I describe as the Bharatiya Kala Kendra area, especially as the garden of Bharatiya Kala Kendra was the focal point from which my 1963 interactivity collecting radiated outwards. Bharatiya Kala Kendra was then at 2 Mata Sundri Road, at the very edge of the area habitable by Lepidoptera. North of B K K are situated Chitli Kabar, Sui Walan, etc., subdivisions of the crowded and plantless 'Shahjahanabad'. The Bharatiya Kala Kendra area consists of small gardens, empty plots, and even an enclave of the thornbushes and thorn-trees characteristic of the Ridge scrub jungle. All four species of *Colotis* and both species of *Ixias* recorded from Delhi were found there. Divided by lanes and small roads, the area is typical of

most of effectually suburban New Delhi, and almost every species of the region may be collected there. My records partly exemplify this. Areas of this kind seem to harbour more *Portulaca oleracea* than the wilds, and so the *Hypolimnas* species are commonly seen in the gardens. This is also true of Bombay, where the plant is one of the first to utilise bare lots.

Very close to the foregoing sublocality there is a small plant nursery, located next to the Supreme Court and opposite Tilak Bridge. Near some relatively wild land, the garden contained a large patch of *Gomphrena globosa*, an everlasting flower much liked by *Danaus*, *Euploea*, *Hypolimnas*, *Precis*, *Tarucus*, *Syntarucus*, *Euchrysops*, *Lampides*, *Catochrysops*, *Catopsilia*, etc. *Vanessa cardui*, however, seemed to prefer a type of Michaelmas Daisy.

A large cut of both dense and relatively bare scrub and thorn jungle behind the Lakshminarayan Birla Mandir is essentially similar to parts of the Ridge Road Jungle further south. I employed six localities within the land contained by Shankar Road, Willingdon Crescent, Sardar Patel Marg, and Ridge Road. Part of it has long been Talkatora Gardens, into which some scrub species penetrate. The flower nursery in Talkatora Gardens was richer at times than other places in *Danaus limniace* and *Genutia*. To the west the gardens merge into jungle amid some ruins, whereas white Lantana makes collecting of *Colotis*, *Ixias*, *Terias* easy and fruitful. Through the gardens and down past the Riding Ground runs a filthy nullah that I call 'the nullah'. Shade and wildflowers made this disagreeable place excellent for collecting in late October and early November. Satyrids, Lycaenids, and Pierids not observed elsewhere were collected here. Immediately north of Malcha Marg there is a moderately wooded low-lying area in which white Lantana abounds, and on which migratory Pierids such as *Appias libythea* were seen in fair numbers in late October. The highest part of the Ridge, bordering on Ridge Road and halfway between Shankar Road and Sardar Patel Marg, is being gradually converted into Buddha Jayanti Park, where the large scale planting of Acanthids probably accounts for the abundance of *Precis* and of *Atella phalantha*. While being focal for species scattered over the surrounding scrub, the park attracts few *Colotis* or *Ixias*. The upper part of the Ridge traversed by the path from the park to Talkatora Gardens was found of least utility in my collecting.

The 'Government Sunder Nursery' area between Sunder Nagar and Humayun's Tomb also consists of six sublocalities, each in some way particular to and useful for concentrations of different species. The differences and relative importance of these sublocalities of course vary from week to week, as is the similar case with the Ridge Road Jungle. Relevant here are two portions of the garden proper, a

G. globosa patch and environs in the SE corner, and a lane bordered by pink Lantana along the eastern edge to the NE corner, whereat there is a small enclave of thorn and other trees. Eastwards from the lane runs a path that passes through pink Lantana hedges, Papaya plants, trees, and thence to a thorn-tree shaded scoutground, after which there is the northern wall of the enclosure actually containing Humayun's Tomb. The scoutground and beyond to the wall is not relevant here. On and south of the path there are a few trees but mainly there is a great deal of pink Lantana. North of the path there is more pink Lantana on the edge of and in a slight dip among a few trees. For some reason this dip was a congregating spot for *Danaus genutia*, and the Lantana at the edge of the dip was where all but one of *Parides aristolochiae* in 1966 were seen. The slope downward north of the path continued down to a wasteland of tall grasses that Donahue has discussed and shown in a photograph with the first part of his study in this journal. The very northernmost last few yards of the slope into this wasteland contain white Lantana on which *Colotis*, *Ixias*, and *Cepora* congregate to a greater extent than elsewhere in the area. South of the path is far more a place for *Precis*, *Catopsilia*, as usual. The subdivisions of this small slice of land were constantly marked in my collecting. I found *Ypthima* for example most abundant south of the path near the Papaya plants, being there more common even than in the nullah.

Last, the square enclosure containing Humayun's Tomb provided three fruitful areas at different times. On the east side starts the bare land bordering the Jamuna, and to the north a small area of scrub jungle east of the sublocalities described for the Nursery. A fair amount of pink Lantana grows in the SE corner. There is a shrub-thicket that includes Chandni, a form of Oleander and probably the source of attraction for the *Euploea core* seen abundantly there in 1966. This was also the only sublocality where *Virachola isocrates* and *Rapala melampus* were seen, barring the latter caught in the nullah.

MATERIAL

All species described herein are detailed in the study by Donahue, which also contains discussion of classification into which I do not presume to enter. Most of my 1963-1965 collection was lost and jettisoned due to poor upkeep, but some key specimens have been presented to the Bombay Natural History Society. Some tagdata was lost with the improperly maintained collection. Collection conducted from summer 1966 onwards was papered and stored, so data is recalled, because until setting no exact correlation is possible. I devised a new system of storage that partly circumvents the latter difficulty.

Packed specimens that cannot safely be resurrected until the time of setting are separately inventorised with all data.

NOTES ON SPECIES

Previously Undocumented Rarities.

Donahue predicted the incidence at Delhi of species that were not earlier recorded. I document four of these :—

Precis atlites—A damaged specimen was caught in late September in the Nursery dip described, and another in good condition was seen on the pink Lantana in the Humayun's Tomb SE corner. The latter was of the northern race, unmistakably, and was seen in early October. It may be noted the 1966 monsoon was curtailed and had petered out at this time.

Telchinia (Acraea) violae—Specimen presented to the Bombay Natural History Society was caught in good condition on the morning 12-iii-64 on an open brick and dirt wasteland next to a school compound, at the side of Rouse Avenue, near the railway foot-bridge. This butterfly likes to fly back and forth in such barren areas.

Virachola isocrates—Two females, if not additional specimens, were caught in early October 1966 in company with *Rapala melampus* on a small wildflower patch in the SE corner of the Humayun's Tomb compound.

Chilasa clytia—form *dissimilis*—large size mimetic of *Danaus limniace*—seen on *Caesalpinia pulcherrima* at highest point of Buddha Jayanti Park, in second week of August 1967. Note :—the small form of this butterfly mimics *Danaus aglea*, especially where the latter and not *Danaus limniace* is seen.

Anticipated Aberrations.

Donahue assumed the incidence of the following aberrations :—

Danaus chrysippus dorippus—On *G. globosa* at the Nursery. Morning 9-ix-67—female. Note :—var. *alcippoides* was at no time noted.

Hypolimnas misippus inaria—Female at least two specimens were caught in the B K K area in late September and early October 1963—One of these, tagged ' Mata Sundri Road—1-x-63 ' has been given to the BNHS. I do not recall it in 1966. Two were caught in the morning 9-ix-67, one on the Nursery *G. globosa* patch, and the other by the Nursery dip path.

Hypolimnas misippus alcippoides, female—In the second week of August 1967 I caught two specimens describable only as semi *alcippoides*. I have a true *alcippoides* from Bombay.

Documented Rarities.

Hypolimnas bolina—females—see next section, on range alteration. Males—lost with most of the old collection, a specimen was caught on Lantana on an overcast day toward the end of September 1963, in the Bharatiya Kala Kendra area—no more were seen until August 1967, four being caught on the yellow Lantana hedge on the highest part of Buddha Jayanti Park, two of these being in copula—another was caught in this same period between 1-viii-67 and 15-viii-67, on the jungle track linking Buddha Jayanti Park and Talkatora Gardens, being attracted to sweat and caught on my trouserfront—one more was caught at the Nursery—morning—10-ix-67. It was at first interested in the *G. globosa* but soon shied away, seeming quite conscious of pursuit and attempting to hide.

Vanessa cardui—Recalled as common in October 1963, but only caught 'for example' because it was more dully coloured than the Canadian race—2 surviving specimens in BNHS tagged Tilak Bridge Nursery 25-x-63 and 26-x-63, brighter than Bombay race.

Argynnis hyperbius—male—Bharatiya Kala Kendra premises lawn—feeble—in the morning—16-iii-64—The weather then had not progressed to hot.

Ergolis merione—One seen and one caught in a lane near Bal Bhavan in B K K area in late September 1963—not subsequently seen.

Rapala melampus—2 or 3 caught in nullah in late October and early November 1963, one given to BNHS tagged for nullah 1-xi-63.

Leptosia nina—Several caught in nullah, where apparently not uncommon in late October and early November 1963.

Delias eucharis—Apparently common in October 1963—seen all over New Delhi and also in a garden in Civil Lines near the Buddha Vihara—Not recalled for 1966—Surviving Tagdata :—females—evening—19-ix-63 in lane near Bal Bhavan, and evening—10-xi-63 in nursery garden of Buddha Jayanti Park at north end.

Appias libythea—Common in the low area between Sardar Patel Marg and the upper reaches of the nullah in late October and early November 1963. Surviving Tagdata :—male 8-ix-63 in jungle behind Lakshminarayan Birla Mandir, female in B K K area

6-x-63, female near the Riding Ground in the Willingdon Crescent Jungle 27-x-63, male in the nullah 27-x-63. Note :—Though at that time knowing nothing of their classificatory identity, no difficulty was experienced in distinguishing this butterfly from others in flight. No sighting recalled for 1966.

Colias electo—Seen in garden of B K K premises late March 1964—specimen as dark orange as *C. myrmidone*.

Parides (Polydorus) aristolochiae—Fairly frequently seen in late September 1963, the first one being caught about 10-ix-63 in the LNB Mandir garden. Two large perfect specimens were caught in September 1966, one in the Nursery dip and the other in the NW corner of the Humayun's Tomb compound. One or two others were seen in the same period, but it seemed rarer than in 1963.

Changes in abundance reflecting possible alteration of Geographical Range.

Danaus limniace—Decidedly rare in 1963, but one specimen being caught, near Bharatiya Kala Kendra in September, a male in fair condition. It was common in Talkatora Gardens in late July 1965, just as the monsoon 'broke' after a long stretch of unbroken extreme heat, and a week later the monsoon failed and faded almost to nothing. During the monsoon in 1966 this butterfly was slightly commoner but not seen at all times. I observed one or two battered specimens in February 1967 in the NE garden of the Humayun's Tomb enclosure. It was very common in early August 1967, second only to *D. chrysippus*. It can be noted that the good 1967 Delhi monsoon began early after unusually vicious heat in early June. The greatest concentration was in Buddha Jayanti Park. Toward the end of the first week of August 1967 the specimens seen and caught seemed without exception old, and new ones appeared in the second week. By the end of the second week they appeared to be leaving Delhi, and their numbers dwindled markedly.

Danaus genutia—Not common in 1963, dwarf specimens being seen and caught in the nullah in late October. Large specimens of fair commonness seen in May and June 1964. The monsoon began in early July and was exceptionally heavy. Numbers oscillated between abundant and scarce through August to October 1966, specimens being caught that were larger than those of races seen elsewhere in India, also a fresh large specimen caught in the NE quarter of the Nursery plot in late September 1966, where they abounded. This species was also abundant in early August 1967

both in Buddha Jayanti Park and the Nursery. The 1967 Delhi monsoon was a good one and started early.

Euploea core—Seen but not common in September 1963. Surviving specimen tagged B K K area 25-ix-63. Abundant in 1966 August, September, and October, mainly in the SE corner of the Humayun's Tomb compound. A year of curtailed monsoon. Uncommon early August 1967, a year of good monsoon.

Hypolimnas misippus—Moderate abundance in monsoon 1966. Far commoner in monsoon 1967.

Hypolimnas bolina—Moderately common 1963. Much commoner 1966. Very abundant, monsoon 1967.

Atella phalantha—Uncommon 1963, it flies at all times from the beginning of the monsoon until the cold weather. Specimens tagged nullah 21-x-63 and 27-x-63. It was commoner than before at July end 1965, and while common in the NE garden of Humayun's Tomb compound in September 1966, it was exceedingly abundant at the same time in Buddha Jayanti Park. It was very curious to note consistently that the specimens at Buddha Jayanti Park were fresh while those at Talkatora Gardens and Humayun's Tomb were all old, as if there were no communicating flight between the obviously separate broods. In early August 1967 this butterfly was markedly common in Buddha Jayanti Park.

Precis hierta—As common as *P. lemonias* or *P. almana* in late September and early October 1963, the broods of this species do not coincide with those of the other *Precids*. It was not common in 1966, but very common above the abundance of other *Precids* in Buddha Jayanti Park in early August 1967.

Miscellaneous.

Mycalesis perseus was seen in several places in Delhi. Two specimens given to the BNHS are tagged B K K area 11-ix-63 and nullah 27-x-63. Others were seen in the jungle behind the LNB Mandir.

Precis hierta was bred from larvae found on *Barleria prionitis* in Buddha Jayanti Park beginning August 1967. Pupating is from about 2200 hrs. to 1000 hrs. next day. Pupal period is 6 days, emergence about 1230 hrs. If the pupae are kept in pitch dark in daylight hours the emergence time is scrambled and postponed. Airconditioning further complicates the issue, as daytime is registered partly by temperature, it would appear. Females outnumbered males 5 to 2 in a brood of 19. Instar 2 to pupation took 6 days.

Atella phalantha female was observed laying on *Barleria prionitis*. I know of no prior record of the use of this foodplant.

Contrary to a statement in Wynter-Blyth's BUTTERFLIES OF THE INDIAN REGION the male of *Ixias pyrene* visits flowers, mainly white Lantana. As Donahue refers to the time of incidence of this species, I list surviving tagdata:—females, LNB Mandir Jungle, 1 white and 1 yellow, dated 8-ix-63—WSF male BKK area 17-ix-63—2 DSF males and 1 yellow female Upper Willingdon Crescent Jungle 21-x-63—1 yellow female same place 27-x-63. This documents the occurrence in October.

The white female of *Colotis fausta* was observed on the Ridge on 21-x-63, but not subsequently in that year.

Catopsilia pyranthe and *C. crocale* are species in respect of which debate exists concerning dimorphism. On 9-viii-66 I saw a male of *C. crocale*, black antennae, coupled with a female of *C. crocale pomona*, the sunflower yellow variety with red antennae. It seems to me that the pale lemon green and sunflower yellow females of *C. crocale pomona* differ from the pale lemon green females of *Crocale crocale* in just the same way as the females of *C. pyranthe florella* differ from the females of *C. pyranthe pyranthe*. In addition to this, *C. crocale pomona* has 6 basic forms, both sides sunflower yellow, UP Lemon Green and UN SY, UP and UN LG, and each of these var. *catilla*. The incidence of these forms seems to depend on locality. Concerning the specific identity, it seems that *C. pyranthe* and *C. crocale* are basically bimorphic. Series of *C. scylla* would probably involve similar parallels, including the alternation of antennae colour, though I see none recorded.